Appl. No.: 10/756,855
Amdt. Dated November 21, 2005
Response to Office Action Mailed August 24, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application.

1. (Currently Amended) An electric distance meter, which irradiates measuring light to an object to be measured and measures a distance from the measuring light reflected by the object, comprising:

a device configured to generate a modulation signal for modulating the measuring light which is irradiated to ~~an~~ the object to be measured;

a pulse signal generation device configured to periodically generate an intermittent pulse signal for generating intermittent modulated measuring light by intermittently adding said modulation signal to a light emitting element;

an AND circuit, which overlaps the modulation signal to the pulse signal;

a driver circuit, which drives the light emitting element as the measuring light based on a signal from the AND circuit;

a frequency signal generation device configured to generate an internal frequency signal with a frequency different from said modulation signal;

~~a light receiving element for outputting a light receiving signal by receiving said intermittent modulated measuring light;~~

a mixing circuit, which mixes the measuring light reflected from the object and the internal frequency signal, and generates a beat signal of ~~difference frequency signal generation device to generate~~ an intermittent difference frequency signal ~~by inputting said light receiving signal and said internal frequency signal~~;

a sampling circuit, which samples a signal generation period of the intermittent difference frequency signal with a predetermined interval;

a storing device configured to store sampling data; and

an arithmetic logical unit ~~for calculating a distance to said object to be measured based on~~ , which calculates a phase difference based on the sampling data stored in the storing device ~~between a phase of the intermittent difference frequency signal output from the difference frequency signal generation device and a phase of intermittent difference frequency signal obtained through a reference optical path~~.

2. (Canceled).

3. (Currently Amended) The electric distance meter according to Claim 1 further comprising a processing circuit ~~for averaging~~ which averages the signal generation period of said intermittent difference frequency signal, wherein ~~a circuit for~~ the sampling circuit samples the signal averaged by the averaging processing circuit, and ~~a~~ the storing device ~~to~~ stores the sampling data,

~~wherein~~ and said arithmetic logical unit calculates the phase difference based on the sampling data stored in the storing device.

4. (Currently Amended) The electric distance meter according to Claim 1, wherein said arithmetic logical unit generates a sine wave curve based on the sampling data obtained by sampling the signal generation period of said intermittent difference frequency signal with the predetermined interval, while generates a sine wave curve based on sampling data obtained by sampling a signal generation period of the intermittent difference frequency signal obtained

though ~~the~~ a reference optical path, and calculates ~~a~~ the distance based on the phase difference between both of the sine wave curves.

5. (Original) The electric distance meter according to Claim 4, wherein said sampling data is integrated for a plurality of periods of said intermittent difference frequency signal, and said arithmetic logical unit generates said sine wave curve based on the data integrated for the plurality of periods.

6. (Original) The electric distance meter according to Claim 4, wherein said arithmetic logical unit collects noise in a non-generation period of the intermittent pulse signal by said intermittent pulse signal generation device as sampling noise data, generates a noise curve based on the sampling noise data, and corrects the sine wave curve by obtaining a difference of said noise curve from the sine wave curve obtained by sampling said signal generation period.

7. (Original) The electric distance meter according to Claim 1, wherein the period of said intermittent pulse signal corresponds to the period of the modulation signal with an interval.

8. (Currently Amended) The electric distance meter according to Claim 1, wherein said intermittent difference frequency signal is generated by inputting said internal frequency signal directly to ~~said~~ a light receiving element.